

A Level Computer Science

Exam Questions

Unit 1.3.2

Database Transactions

Name		Date	
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Score	Percentage	Grade
/ 20		

Question 1

RestaurantReview is a website that allows users to leave reviews and ratings for different restaurants. The website uses a database with the following structure.



The database management system ensures referential integrity is maintained.

Whenever a review is added to the system, the restaurant's average rating is updated. This transaction is ACID.

The A in ACID refers to Atomic.

- a) Describe what is meant by the term 'Atomic' in the context of ACID transactions. You should refer to the example of a review being added.

[2]

- b) State what the letters CID refer to in ACID.

C	
I	
D	

[3]

- c) Explain what is meant by referential integrity, giving an example which refers to the database described above.

[3]

- d) Each review includes a score out of 5. When the score is entered on the website it is checked in the browser to ensure a number no higher than 5 has been entered. It is then checked again on the server.

- i. State what is meant by the term 'server'.

[1]

- ii. Explain why it is important that the review score that the user entered is also checked server-side.

[2]

Question 2

A database stores information about songs on a music streaming service.

One of the tables, called Song, has the fields:

Title, Artist, Genre, Length

A band called *RandomBits* removes their permission for their songs to be streamed. The company removes all the songs belonging to *RandomBits* from their service.

- a) Write an SQL statement that will remove all songs by *RandomBits* from the table Song.

[2]

- b) When the songs have been removed, explain what must happen to the table PlaylistEntry if the database is to retain its referential integrity. (You are not expected to write the SQL to do this).

[1]

Question 3

A supermarket uses a stock control system. Details of products are stored on a stock database. When details of a product are input to the system, the data must be verified and validated.

- a) Verification is done using a double entry system.
Explain what is meant by verification using double entry.

[2]

- b) The data about the price of a product will need to be validated on input.
Describe **two** validation checks that can be carried out on the price of a product.

Validation Check 1

Validation Check 2

[4]